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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,694	08/30/2005	Mingwei Xiao	8737-029/NP	6138

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EXAMINER

LU, C CAIXIA

ART UNIT PAPER NUMBER

1713

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/533,694	Applicant(s) XIAO ET AL.	
	Examiner Caixia Lu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/3/05&7/7/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Applicants are advised to making the following changes in the claims:

Throughout the claims

Replace the phrase "characterized in that" with --wherein--.

Claim 1

Lines 1-2, replace ", which uses , as magnesium halide source," with --comprising--

Claim 2

Line 1, delete the phrase "for ethylene polymerization as claims in".

Claim 3

Line 1, delete the phrase "for ethylene polymerization as claims in".

Claim 4

Line 1, replace "as claimed in" with --of--.

Line 4, replace "having a structure represented by" with --of--.

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Lines 9-10, replace "to give silica loading the magnesium compound" with --to provide a magnesium compound loaded silica support--.

Line 12, replace "the silica loading the magnesium compound as prepared in" with --the magnesium compound loaded silica support of--.

Line 20, delete the term "where".

Lines 21-22, delete "and the titanium compound is used in such an amount that".

Line 25, delete the term "where".

Lines 26-27, delete "and the alkyl aluminum compound is used in such an amount that".

Claim 16

Corrections similar to those listed for claim 4 should also be made for claim 16.

3. Claims 17 and 18 provide for the use of the catalyst, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 17 and 18 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

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If applicants intend to claim an ethylene polymerization process, the examiner suggests to replace claim 17 with "A polymerization process comprising contacting ethylene and the catalyst of claim 1".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Xiao et al. (US 6,303,716).

The instant claims are directed to a catalyst composition comprising a magnesium compound of formula $(RMgX)_p(MgX_2)_q$ with q:p in the range of greater than 0 to 1.

Xiao's magnesium compounds demonstrated in Examples 1, 6 and 7 anticipate the instant claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 4-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fottinger et al. (US 2005/0075241) in view of Xiao et al. (US 6,303,716).

Fottinger teaches a process for preparation of Ziegler catalyst comprising A) contacting inorganic metal oxide such as silica with a magnesium compound such as MgR_nX_{2-n} , B) subsequently bringing the magnesium impregnated silica in to contact with a halogenating agent such as n-butyl chloride, and C) bringing the product of step B) into contact with a tetravalent titanium compound, an organoaluminum compound and an optional electron donor (page 1, [0007] to [0018], page 2, [0029]).

It is noted that Fottinger does not expressly teach the magnesium compound MgR_nX_{2-n} to be $(RMgX)_p(MgX_2)_q$ with q:p in the range of greater than 0 to 1. However, such a magnesium compound is taught in Xiao as shown above.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to Xiao's $(RMgX)_p(MgX_2)_q$ to Fottinger's catalyst preparation process to provide a Ziegler catalyst for olefin polymerization since Xiao's $(RMgX)_p(MgX_2)_q$ is functionally equivalent to Fottinger's MgR_nX_{2-n} and can be readily prepared and in the absence of any showing criticality and unexpected results.

It is noted that Fottinger's halogenation reaction is conducted prior to the contact with titanium compound and organoaluminum compound. It is understood that the function of halogenating step is to convert the nonhalogen group such as alkyl and alkoxide in the catalyst complex to halogen in order to maximize the catalyst activity. When an OR containing titanium compound is used, halogenation reaction must

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conducted to convert OR in the titanium complex to halogen, and when such is done, the teaching of the cited prior art renders the instant claim 16 obvious.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

A handwritten signature in black ink, appearing to read 'Caixia Lu', is positioned above the printed name and title.

Caixia Lu, Ph. D.
Primary Examiner